

Nevada Infrastructure for Climate Change Science, Education, and Outreach



Policy,
Decision Making,
Outreach



Cyberinfrastructure



Climate Modeling



Education



Ecological Change



Water Resources

NSF EPSCoR RII Award EPS-0814372 *“Nevada Infrastructure for Climate Change Science, Education, and Outreach”*

Announcement for:

UNLV, UNR, NSC, CSN, GBC, TMCC, WNC and Sierra Nevada College



Nevada NSF EPSCoR
Nevada System of Higher Education

Undergraduate Research Opportunity Program
SUMMER SCHOLARSHIP 2009
Submission Deadline: MARCH 9, 2009

The NSHE especially encourages broad participation including students from community colleges, women, underrepresented racial/ethnic minorities (Hispanic/Latino; American Indian or Alaskan Native; Black or African American, and Native Hawaiian or other Pacific Islander), people with disabilities and first-generation/low socioeconomic status students to respond to this solicitation.

I. INTRODUCTION

The Nevada System of Higher Education received a Research Infrastructure Improvement (RII) Award from the National Science Foundation's Experimental Program for the Stimulation of Competitive Research (NSF EPSCoR) for Climate Change research in Nevada. This award creates a statewide interdisciplinary program focused on understanding the effects of regional climate change on ecosystems, improving communication between researchers and policy makers, and better educating the public on climate change in Nevada.

The program has six areas of interest listed below. The project encompasses a wide range of disciplines, including (but not limited to) Biology, Civil Engineering, Climatology, Computer Science, Ecology, Education, Environmental Studies, Geography, Hydrology, Journalism, Natural Resources, and Political Science. When formulating a research project, consider that the overarching goal of this NSF EPSCoR award is for interdisciplinary science teams to build capacity in climate change research to measure environmental changes, develop climate models, translate climate-change science for decision makers, create computer systems to make climate data more accessible, and develop new ways to teach about climate change.

NSF EPSCoR Climate Change Program Components: 6 areas of interest:

Climate Modeling: Develop the capability to model climate change at a regional and sub-regional scale and assess its effects on ecosystems and resources to evaluate the effects of different future climate scenarios and adaptation strategies. *Component Lead: Dr. Darko Koracin, 775-674-7091, darko.koracin@dri.edu*

Ecological Change Component: Develop data collection, modeling, and visualization infrastructure to determine and analyze effects of climate change on ecosystems and disturbance regimes. *Component Lead: Dr. Franco Biondi, 775-784-6921, fbiondi@unr.nevada.edu*

Water Resources Component: Develop data collection, modeling, and visualization infrastructure to better quantify and model changes in water balance and supply under climate change. *Component Lead: Dr. Michael Young, 702-862-5489, Michael.Young@dri.edu*

Policy, Decision Making, and Outreach Component: Develop data collection and modeling infrastructure to assess climate change effects on human systems and responses to better understand institutional and societal aspects of climate change and to enhance policy making and outreach to communities and stakeholders. *Component Lead: Dr. William James Smith Jr., 702-895-4439, bill.smith@unlv.edu*

Cyberinfrastructure Component: Develop a Data Portal and software frameworks that will support interdisciplinary climate change research via integration of data from observational networks and modeling. *Component Lead: Dr. Sergiu Dascalu, 775-784-4613, dascalus@cse.unr.edu*

Education Component: Develop educational infrastructure to train students at all levels and provide public outreach on climate change issues. *Component Lead: Dr. David M. Hassenzahl, 702-895-4457, david.hassenzahl@unlv.edu*

For more information on Nevada's NSF EPSCoR Climate Change Program and involved faculty researchers, visit <http://www.nevada.edu/epscor/>. **You must identify one or more faculty members with whom you would be interested in conducting research.**

For suggested Climate Change mentors and project topics, please contact:

Dr. Nick Lancaster (DRI) – Nicholas.Lancaster@dri.edu,
Tom Piechota (UNLV) – Thomas.Piechota@unlv.edu , or
Scott Mensing (UNR) – smensing@unr.edu,

For other science areas, a list of possible mentors can be found at <http://www.nevada.edu/epscor/mentor.html>.

II. PROGRAM DESCRIPTION AND INSTRUCTIONS

A. Program Solicitation

The Nevada System of Higher Education announces the 2009 Summer Scholarship program to promote undergraduate research in all NSHE institutions. The program is supported by funding from Nevada's NSF EPSCoR Climate Change Program and the State of Nevada. Students in any major are eligible. At least 50% of the proposals will be funded for research focused on climate change areas listed above. This solicitation is also open to proposals in science, technology, engineering, math, education, or journalism with focus on teaching or communicating K-12 science or technology.

The proposals must be original and written by the scholarship applicant. The research must be conducted during the Summer 2009 under the guidance of a faculty research mentor(s) at the University of Nevada, Reno (UNR), the University of Nevada, Las Vegas (UNLV), or the Desert Research Institute (DRI). Scholarships will provide \$4500 per student awardee and \$1000 to the faculty mentor overseeing the project to cover research expenses.

B. Eligibility

Applicants must be:

- US Citizens or permanent residents of the United States,
 - Full time students in a degree program with a GPA of 3.0 studying at one of the NSHE institutions: UNLV, UNR, NSC, CSN, GBC, TMCC, WNC, or Sierra Nevada College,
 - Supervised by a faculty mentor,
 - Students maintaining their undergraduate status throughout the entire program; students graduating in (May 2009) are not eligible.
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- All participants will be responsible for enrolling themselves in at least one to three units of **research credit** in the first summer 2009 session. A list of acceptable courses will be provided to those funded.
 - Past recipients of the NSF-EPSCoR undergraduate research awards are not eligible.

C. Award Information

• *The Nevada System of Higher Education does not provide tax advice. If you have questions about possible tax liabilities, you may refer to the IRS web sites: <http://www.irs.ustreas.gov>*

• *As each student may have a different threshold before “capping out” in terms of receiving this federal funding and since acceptance of this award may impact a student’s income level to a degree that could affect eligibility for other scholarships, fellowships, and student loans; it is the students’ duty to consult with campus financial aid advisors.*

This is a full 10 week commitment during the summer of 2009. *Because all recipients will be immersed in time-intensive research, participants will not be allowed to engage in other research programs or have other work or employment.* Special permission to have outside employment is only allowed if granted by the NSF EPSCoR Project Investigator, Dr. Gayle Dana. Requests should be made through Alice Ward at alice_ward@nshe.nevada.edu

D. Program Guidelines

1. Research must be conducted under the direction of a faculty mentor who has agreed to supervise the research project.
2. Students in any major are eligible. Proposals in climate change are encouraged, including, but not limited to, climate modeling, ecological change, water resources, cyberinfrastructure, and policy and decision making. Proposals on the education or communication of climate change are also encouraged. Funding may also be available to projects not related to climate change; these are limited to students majoring in STEM fields: science, technology, engineering, or mathematics or majoring in education and specializing in teaching K-12.
3. It is acceptable for proposals from two or more students to be part of a larger research project; however, each proposal must be a unique effort by the student and will be reviewed on its own merit.
4. The award period is from June 8 – Aug 14, 2009.
5. Awardees must be present during the entire program period.
6. Successful applicants agree to attend a safety class as necessary depending on the nature of their research.
7. Successful candidates will be expected to provide programmatic feedback for an NSF Evaluation in the way of surveys and questionnaires.
8. Each student **must** prepare and present a poster at one of the combined NSF EPSCoR/NIH INBRE Poster Meetings held in both Reno and Las Vegas in August 2009. Exact dates will be provided to participants. The poster should represent the research done over the summer. Participants will submit an abstract of their research report to Dr. Saiid Saiidi, UNR or Dr. John Farley, UNLV by August 3, 2009.
9. Further programmatic dates and details will be provided to successful candidates.

E. Proposal Preparation Instructions

Upon receipt of each proposal/submission as a **single pdf document**, applicants will be sent a project information document that must be completed and returned within three days. If an applicant does not receive the project information document, he/she should contact Ms. Ward to verify receipt of proposal by the NSHE Sponsored Programs Office.

1. **Cover Page (form in Appendix):** Applicants will need to get required signatures.
2. **Project Description (limit two pages including any and all graphs or pictures):** The formulation of the research project may be a result of a collaborative effort by the applicant and mentor; however, the project description **must be written solely by the undergraduate applicant**. It should be a concise statement including a clear hypotheses to be tested or questions to be asked. It must be written in a way that is understandable to reviewers whose background may be outside the applicant's field. The two page project description should be single-spaced with 1" margins, in 12-pt. font and must include the following sections:
 1. Abstract (50-100 words)
 2. Introduction
 3. Objectives
 4. Plans for research and/or creative work
 5. Timetable
 6. Plans for dissemination of results
3. **Scanned Official Transcripts or downloaded "unofficial" pdf. transcripts from the University website:** transcripts of all courses completed, including a list of courses currently enrolled in for Spring 2009.
4. **Endorsement letter(s):** from supervising faculty mentor(s) that indicates their approval of the proposal and describes their level of involvement in the project. All proposed mentors should affirm that the proposal is the original work of the student and that only guidance in editing and formatting the document were provided to the student applicant. Each proposed mentor must "sign-off" on the proposal noting approval and affirming that they have read the student's proposal and pledge to mentor the student throughout the 10 week period.
5. **References/citations:** not included in the two page limit for the project description.
6. **Biographical Sketch or CV:** one each from applicant/student and mentor, limited to two pages per person, for the applicant/student and mentor.

F. Projects Involving Human Subjects or Vertebrate Animals

Prior approval by the human subjects (IRB) and/or the animal subjects (IACUC) review boards is not required for proposal submission. However, students chosen to receive a scholarship under this program who anticipate the use of human or animal subjects in their research must receive approval of their research protocols by the appropriate review board prior to the beginning of research and release of funds.

1. Human Subjects: If this proposed project involves the collection of information from human beings through interaction or observation, include an attachment (not included in the two page limit) that provides sufficient information to enable reviewers to evaluate potential risks to subjects. Include information concerning the subject population, type(s) of information to be gathered, and measures to be taken to protect privacy and reduce risks.
2. Vertebrate Subjects: If this proposed project involves living vertebrate animals in any way, include an attachment (not included in the two page limit) that provides sufficient information to enable reviewers to evaluate the choice of species, number of animals to be used, and any exposure of animals to discomfort, pain, or injury.

III. PROPOSAL REVIEW PROCESS AND EVALUATION CRITERIA

Proposals will be selected based on a statewide merit-based review. The screening and selection process will include a review committee that will focus on these review criteria:

- 1) Has the applicant demonstrated a level of academic preparation and excellence in the form of GPA, appropriate coursework and/or other measures that would predict success in a research experience?
- 2) Does the applicant have other background experience and/or extracurricular activities which would help predict success in a research experience?
- 3) Has the applicant clearly articulated his/her motivation and reasons for seeking this appointment?
- 4) Are the applicant's letters of reference supportive of his/her participation in the program - are there specific references to potential and high promise for success?

IV. PROPOSAL SUBMISSION, AWARD NOTIFICIATON, AND TIMELINE

A. Submission of Proposals

All required documentation *listed in this announcement under “E. Proposal Preparation”* should be scanned into the complete proposal and converted into one pdf. file for submission. Mentors have the option of submitting pdf ‘letters of support’ as attachments to e-mails directly to Alice Ward.

Applicants must submit their complete proposal via e-mail to Alice Ward at: alice_ward@nshe.nevada.edu.

The subject line should be specific to each applicant and read:
Last Name_First Name_NSF EPSCoR Scholarship
Example: (Jones_Tom_NSF EPSCoR Scholarship)

NOTE: Application deadline: March 9, 2009, 5:00 p.m.

B. Notification

Letters of award as well as letters of regret will be sent to all applicants after a statewide review has been held.

C. Obligation to the Government

Applicants for the award will be considered without regard to race, creed, color, sex, age, national origin and/or physical impairment.

D. Contacts

Potential applicants with questions regarding this program are strongly encouraged to contact a Program Leader.

University of Nevada, Reno: Dr. Saiid Saiidi; E-mail: ugresearch@unr.edu	University of Nevada, Las Vegas: Dr. John Farley; E-mail: mail: farley@unlv.nevada.edu
Nevada NSF EPSCoR Climate Change:	Nevada NSF EPSCoR Program Office: http://www.nevada.edu/epscor/programs-nsf.html
Dr. Nick Lancaster (DRI) E-mail:	Nicholas.Lancaster@dri.edu
Dr. Tom Piechota (UNLV) E-mail:	Thomas.Piechota@unlv.edu
Dr. Scott Mensing (UNR) E-mail:	smensing@unr.edu